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A REVIEW STUDY OF MAINTENANCE AND MANAGEMENT ISSUES IN IBS COMMERCIAL BUILDING

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Abstract - Failure of design professionals to consider maintenance element during the design process thus results in higher operating cost, wastage, defects during the post occupancy of a building. Accordingly, this study will discuss the problems and issues that appear in the building management in commercial building in Malaysia as parts of the efforts to enhance the building value. The research was conducted by collecting data from journal articles about the building management issue. Good management of the building will be able to influence the quality of the buildings that remain long, safe and beautiful without any damage and problems. In addition, building a good management can ensure that the facilities available in the building are well and meet the standard. Thus, exposure to the problems and needs in the management of the building would be able to help improve building management systems to be more effective.

Keywords- component; Commercial Building, Industrialised Building System (IBS), Facilities, Building management systems.

I. INTRODUCTION

Building Management was developed there over 20 years in some developed countries such as the United States and the United Kingdom. Now, it grew up in several Asian countries such as Japan, Hong Kong and Singapore. In general, the management of various disciplines involved in building and activities that can be adopted by all organizations whether public or private sector.

Building management system is an important component in the fields of civil engineering and

building now (Nawi et al., 2013). Management system is a form of building systems used in the management of maintenance of a building. Building maintenance is an activity of repair the damage, protect and monitor the building to continue to be in good condition. Thus, the construction of a good management system will be able to influence the quality of work, cost, time, and staff satisfaction. Maintenance is an activity to conserve, preserve, manage and regulate buildings, facilities, equipment, services (services) and its surrounding buildings to meet current standards, the usefulness and value of defense facilities and security of the institution.

Almost every building is inseparable from defect or damage despite various preventive measures taken during the design and construction. There are those who prefer to build a new building to replace the abandoned buildings repair and maintenance. This condition is actually common in developing countries. Many provisions of the cutting and extended for a further building maintenance account without realizing that each new building was added burden of maintenance. As a result more and more buildings must be evacuated well ahead of time that should be. This means that the country has lost a part of the property that was built from a limited capital.

Building maintenance is required once the building is complete. At the early stage, a defect that occurs due to the design of the building. Throughout the construction process, all design changes are required and recommended by the architect shall be borne by the noble hand; defects caused by negligence during construction will be borne by the contractor. Warranty period against defects in six or twelve months in the provisions of the construction contract. During this period, the contractor shall repair any defect found with its own cost. After that period ends, the building manager must provide mor

maintenance program are loaded. What he said is to respond to the building fully functional and producing gains in economic life.

II. LITERATURE REVIEW

An Industrialised Building System (IBS) commercial building is one that is dedicated to commercial activities. Generally, IBS is defined as a construction process that utilises techniques, products, components, or building systems which involve prefabricated components and on-site installation (Nawi et al., 2011; CIDB, 2001). The technical classification of a commercial building for zoning purposes is that it has more than half of its floor space used for commercial activities. Common examples of commercial IBS buildings include "stores, offices, schools, churches, gymnasiums, libraries, museums, hospitals, clinics, warehouses and jails. An alternative definition of a commercial building is a structure that is not used for residential or civic functions. Various retailers and other businesses lease space in commercial buildings in order to operate without buying a property.

Among the issues to public attention in the field of building maintenance management now is how good maintenance culture can be implemented in Malaysia? We are proud as a country that capable of providing world-class infrastructure, but not in terms of good building maintenance. Defects and damage for new buildings, commercial buildings and infrastructure especially developed by the government is often a problem in the management of building maintenance. Problems like this are very embarrassing and too serious to be ignored. According to Low, S. P. & Darren W. (2001) Poor maintenance of public buildings and infrastructure can lead to accidents and injuries. Buildings and facilities that are not properly maintained can cause discomfort and lead to accidents and injury to people. Ahmad Zawawi, É.M. Kamaruzzaman & SN (2009) stated that the incident occurred because of bad service problem is to analyze the malaise Malaysians for shoddy work, the implementation is not perfect, poor management, poor maintenance culture and lack of work ethic among those involved.

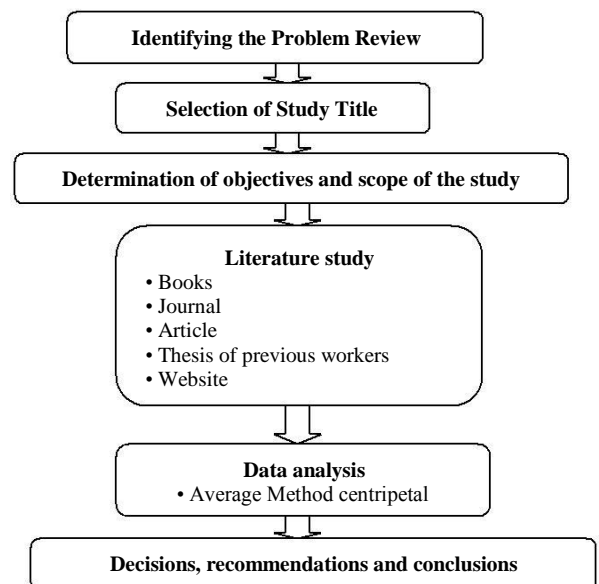
In addition, there is the question is not only an ethical issue but also the issue of safety and health at work. Ahmad Zawawi, É.M. Kamaruzzaman & SN (2009) estimate the impact of the collapsed building is the issue of safety in the workplace cannot be

underestimated. It is time for all parties to act or do something to prevent or suppress unpleasant Malaysians reoccurring things. Many believe that Malaysia is a country that "has first class world infrastructure but third class mentality" is correct. In addition, when we talk about culture of maintenance in the country, maintenance and service culture is certainly not our strength. We are very good in providing sophisticated buildings and infrastructure, but when it comes to the issue of maintenance and upkeep of buildings and infrastructure, we have many weaknesses and problems. All authorities and Malaysians must cultivate a good maintenance culture and make it a daily lifestyle.

E. Zavadskas. E. Bejder & A. Kaklauskas. (1998) agreed that the losses, the period of interruption of service to customers and the image of the organization will be affected by this problem. For the private sector, it involves the loss of the more notable because it has to do with business and investment, but also allow the company to shut down if the problem is not resolved soon. Profession related to the field of management and maintenance of facilities should be taken seriously by all parties to ensure that such incidents do not recur.

III. RESEARCH METODOLOGY

The research methodology is planned and conducted to achieve all the objectives of the study as described above. The figure below shows a flowchart of the steps taken to carry out this study and will be explained in more detail:



IV. DATA ANALYSIS

In the commercial management of building maintenance, security issues and health often become social issues in the commercial management of building maintenance. Safety and health in this study is the protection of the residents and visitors of the threat of injury and illness while in a building. According to Lewis (2000), building maintenance management is responsible for overseeing the safety and health of the operation and maintenance of facilities under its control.

The low quality of work and inadequate maintenance of a building can be a factor in accident, injury or death. The importance of maintaining not only for the long life of a system or equipment, but it is also able to prevent any accident or illness occurs. Maintenance of buildings, including commercial buildings should see the overall security of the building on the outside and in the hidden part of the building, especially as the electrical wiring, water pipes, duct air conditioning, structure and so on. Building maintenance of weakness will only get worse when a little damage at first, but then become more to a level where it can threaten the lives of people who are in the commercial building.

Commercial maintenance management of buildings should take precautions to ensure building occupants are not exposed to any danger of the work. Qualified personnel with the safe maintenance procedures can protect the occupants, visitors and maintenance staff. Reese (2004) stated that in the framework of maintenance safely and in good health, maintenance personnel must adhere to the guidelines as follows:

- Provide barriers around hazardous areas
- Do not block the emergency evacuation save.
- Do not leave the danger in the vicinity of the road. (e.g., equipment and materials)
- Do not leave exposed conductors of electricity.
- Use lockout procedures / disconnect.
- Clean all chemical spills immediately.
- Protect person who is in the building against general risks.
- Replace all guards have been abandoned.
- Keep all unnecessary steps.
- Alert the public to the dangers.

A research found that most of the air in commercial buildings in the country is bad and dangerous to health (Bernama 2005). This symptom is also known as "pain" is defined as "sick building syndrome" (Sick Building Syndrome (SBS). Most ventilation systems are particularly in commercial buildings is not in good condition and has been contaminated by toxic than carbon dioxide and dust. Ilozor et al. (2001) said that SBS is a term used to describe a combination of these chemicals, smoke and component materials that cause indoor air quality of a building to be unhealthy. Morris and Dennison (1995) said, according to several reports of previous research has found that the air conditioning systems in a building to be the main cause of SBS.

The problem faced by people because of quality of the air inside the building can be divided into two, namely discomfort and disease (Rooley 1997). Early sign that SBS will be felt by building occupants feel too hot or too cold, too dry, lack of freshness and fatigue. Because of these problems SBS, building occupants will have more serious effects such as tired or strained eyes, unusual tiredness, fatigue or drowsiness, headaches, tension, anxiety or bestial, nasal congestion, the shortness of breath, panting, and skin dryness (Mitchell 1999 Ilozor et al., 2001)

V. RECOMMENDATION

To overcome the problem of SBS in buildings, as described above, Rooley (1997) suggested that the emphasis should be made on aspects of the system duct cleaning air conditioning, control of pollution by the choice of building materials, etc. Monitoring the quality of indoor air should be implemented to ensure that the oxygen content in the construction of carbon dioxide sufficient and excessive is removed.

Now with the different laws, the laws and practices of local and international standards for safety and health in the building was created. Therefore, the maintenance management of a commercial building in Malaysia should be good and comply with standards and regulations. Below are listed a number of regulations and standards relating to health and safety in the building:

- Occupational Safety and Health Act 1994 (Act 514)
- Fire Services Act 1998 (Act 341)
- plant and machinery Act 1967 (Act 139)
- Electricity Supply Act 1990 (Act 447) and electricity regulation 1994

- By-laws uniform building (1984)
- Code of practice for the Malaysian indoor air quality (2005)ASHRAE Standard 62 : standard for natural and mechanical (1973)
- ASHRAE Standard 62: standard for acceptable indoor air quality (1989)
- ASHRAE standard 55: Thermal Environmental Condition for Human occupancy (1992), etc.

Based on the foregoing, several measures related to safety and health building maintenance can be taken as indicated below: -

- Establishment of a safety related to building maintenance and health maintenance form.
- The comprehensive plan for the long term of five years or more service to facilitate the preparation of the budget, labor, spare parts and so on.
- Establish cooperation between industry expertise of government such as the Department of Public Works (PWD) and the private sector to provide and enhance care policy systematic and professional buildings in Malaysia.
- Increase compliance by the forces of the building that the fire department fire safety, security money to build security, elevators and escalators, the Energy Commission for electrical safety and others.
- Increase awareness and sensitivity to the importance of building maintenance for all Malaysians.
- Creation of facilities management in the maintenance practices of production, quality and reliability as qualified Centered Maintenance (Reliable-Centered Maintenance-RCM), Total Productive Maintenance (Total Productive Maintenance-TPM) and Total Quality Maintenance (Total Quality maintenance TQ Main)
- Require a thorough examination by government buildings, consultants, competent surveyor periodically every three to five years to ensure that the building is in good condition and especially the safety of building occupants.

In addition, the competent authorities as a model of best practice management capabilities adopted in developed as a model of management in Malaysia country. The population problem is not disciplined to pay maintenance actually not only an inconvenience more responsible to do bills, even if the government had to bear its own costs of facilities used.

Improving the quality of construction, authorities such as the Ministry of Housing and Local Government must identify weaknesses and gaps in legislation issues, for example, the legislation relating to building maintenance and building and common property (Maintenance and Management) Act 2007, to be updated in order to improve its effectiveness of building management. The approach aims to ensure better protection of the rights and interests of the owners of commercial buildings such as shopping malls and apartments. Improved act covers all relevant process properties with strata titles, including the construction of a commercial site. This includes the development of guidelines, regulations, training programs for developers, management companies as well as providing advisory services to owners and respond to their complaints.

VI. CONCLUSION

In Malaysia, facility management is still a new entity and is 10 years old. But unfortunately, it does not grow and no professional organization that exists to develop and defend the problems encountered in the management of maintenance buildings commercial buildings. This situation is very different compared to western countries and other Asian countries like Japan and Hong Kong. These countries have an active professional organization to develop management systems such as the International Facility Management Association (IFMA) in the United States, the British Institute of Facilities Management (BIFM) in the United Kingdom, Japan facility Promotion Management Association (JFMA) in Japan and Hong Kong Institute of facility Management (HKIFM) in Hong Kong. Therefore, governmental or non-governmental organizations (NGOs) in Malaysia should make their way to develop professional organizations in the management of facilities. The results from the study also prove that early consideration of maintenance element during the early stage of project especially in design process such as creates an opportunity for early conflict resolution, incorporation of constructability, manufacturability, maintainability,

safety and risk analyses significantly contributed to the enhancement level of sustainability and the overall building performance.

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